

WHAT IS CLAIMED IS:

- Sub A<sup>1</sup>* > 1. An image processing apparatus comprising:  
recording means for recording image information  
5 appended with quantized space information in units of  
pixels;  
setting means for setting a sampling rate;  
reconstruction means for reconstructing an image  
by reading out image information from the recording  
10 means in accordance with the sampling rate set by the  
setting means; and  
interpolation means for interpolating pixels at  
empty pixel positions to obtain a resolution of an image  
required for display when the reconstruction means  
15 reconstructs the image at a resolution lower than the  
resolution of the image required for display.
2. The apparatus according to claim 1, wherein the  
image information is expressed by a ray space theory.
- Sub A<sup>2</sup>* > 3. The apparatus according to claim 1, wherein the  
20 setting means determines the sampling rate on the basis  
of the moving speed in a virtual space designated by a  
user.
4. The apparatus according to claim 1, wherein the  
setting means determines the sampling rate on the basis  
25 of the manipulation speed of an object in a virtual  
space designated by a user.

well known

5. The apparatus according to claim 1, wherein the interpolation means interpolates empty pixel positions by texture mapping.

6. The apparatus according to claim 3, wherein the moving speed in the virtual space is determined by detecting the moving speed of a mouse.

7. The apparatus according to claim 4, wherein the moving speed in the virtual space is determined by detecting the moving speed of a mouse.

8. The apparatus according to claim 3, wherein the manipulation speed of the object in the virtual space is determined by detecting the moving speed of a mouse.

9. The apparatus according to claim 4, wherein the manipulation speed of the object in the virtual space is determined by detecting a moving speed of a mouse.

Sub A3

10. An image processing method for reconstructing an image obtained by recording image information appended with quantized space information in units of pixels, comprising:

20 a setting step of setting a sampling rate;

a reconstruction step of reconstructing an image by reading out image information from a recording means in accordance with the sampling rate set in the setting step; and

25 an interpolation step of interpolating pixels for empty pixel positions to obtain a resolution of an image

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cancel.

required for display when the image is reconstructed in the reconstruction step at a resolution lower than the resolution of the image required for display.

11. The method according to claim 10, wherein the  
5 image information is expressed by a ray space theory.

12. The method according to claim 10, wherein the setting step includes a step of determining the sampling rate on the basis of a moving speed designated by a user in a virtual space.

10 13. The method according to claim 10, wherein the setting step includes a step of determining determines the sampling rate on the basis of a manipulation speed designated by a user of an object in a virtual space.

14. The method according to claim 10, wherein the  
15 interpolation step includes a step of interpolating empty pixel positions by texture mapping.

15. The method according to claim 12, wherein the moving speed in the virtual space is determined by detecting the moving speed of a mouse.

20 16. The method according to claim 13, wherein the manipulation speed of the object in the virtual space is determined by detecting the moving speed of a mouse.

17. An image processing method for reconstructing an image which is recorded as ray space data in recording  
25 means according to a first resolution, comprising:

a step of detecting a moving speed in a space of the reconstructed image;

a step of determining a second resolution of ray space data to be read out from the recording means in accordance with the detected moving speed in the space, and reading out ray space data from the recording means in accordance with the second resolution; and

a step of interpolating pixels at empty pixel positions produced in correspondence with dropping to the second resolution smaller than the first resolution.

18. A storage medium for storing a computer program for a computer implementation of the method of claim 10.

19. An image processing apparatus comprising:

recording means for recording image information appended with quantized space information in units of pixels;

setting means for setting a sampling rate;

reconstruction means for reconstructing an image by reading out image information from the recording means in accordance with the sampling rate set by the setting means;

designnning means for designnning a change speed of a reconstructed image;

changing resolution meaning for controlling resolution of the image by changing the sampling rate in

accordance with the designing by the designing meaning; and

interpolation means for interpolating between pixels on the basis of a resolution.

5 20. The apparatus according to claim 19, wherein the image information is expressed by a ray space theory.

21. The apparatus according to claim 19, wherein the designing means determines the sampling rate on the basis of the moving speed in a virtual space designated  
10 by a user.

22. The apparatus according to claim 21, wherein the designing means determines the sampling rate on the basis of the manipulation speed of an object in a virtual space designated by a user.

15 23. The apparatus according to claim 19, wherein the interpolation means interpolates between pixels by texture mapping.

24. The apparatus according to claim 22, wherein the moving speed in the virtual space is determined by  
20 detecting the moving speed of a mouse.

25. An image processing method for reconstructing an image obtained by recording image information appended with quantized space information in units of pixels, comprising:

25 a setting step of setting a sampling rate;

a reconstruction step of reconstructing an image by reading out image information from a recording means in accordance with the sampling rate set in the setting step;

5 a designning step of designning a change speed of a reconstructed image;

a changing resolution step of controlling resolution of the image by changing the sampling rate in accordance with the designning in the designning step;

10 and

a interpolation step of interpolating between pixels on the basis of a resolution.

26. The method according to claim 25, wherein the image information is expressed by a ray space theory.

15 27. The method according to claim 25, wherein the designning step includes a step of determining sampling rate on the basis of the moving speed in a virtual space designated by a user.

20 28. The method according to claim 27, wherein the designning step includes a step of determining the sampling rate on the basis of the manipulation speed of an object in a virtual space designated by a user.

29. The method according to claim 25, wherein the interpolation step includes a step of interpolating  
25 between pixels by texture mapping.

30. The method according to claim 28, wherein the moving speed in the virtual space is determined by detecting the moving speed of a mouse.

*Sub A<sup>4</sup>* 31. A storage medium for storing a computer program for a computer implementation of the method of claim 25.

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